RTC SAFETY BULLETIN

MAY 2004

HAZCOM - Reproductive Hazards

Reproductive Hazard = any occupational stressor (biological, chemical, or physical) that has the potential to adversely affect the human reproductive process. It is important to realize that many reproductive hazards also cause other adverse health effects. For example, ethylene oxide, used in hospital sterilizers, is also known to be a carcinogen.

Mutagen = any stressor, usually chemical, that causes damage to eggs and sperm, resulting in sterility or birth defects.

Teratogen = an agent that causes growth abnormalities in embryos, genetic modifications in cells, etc.; ionizing radiation can have this effect.

Background: In 1991, the US Supreme Court ruled that women of childbearing age could not be excluded from employment as a precautionary measure to protect a fetus (existing or future) from exposure to a reproductive hazard. Navy policy is to provide safe and healthful working conditions for all employees that will not damage or affect their fertility or offspring. There are major data gaps in reproductive toxicology research and safe exposure levels have yet to be established for many substances. Therefore the goal is to keep exposures to all reproductive chemical stressors as low as reasonably achievable.

Requirements:

1. It is the responsibility of the employee to inform their supervisor as soon as possible that they are pregnant. The Supervisor and employee shall then complete a copy of the Reproductive Hazards Questionnaire and provide a copy to the local Occupational Health and Safety Departments. Form is available at the NAVSTA Safety Office.

2. Reproductive hazard training is required for employees and Supervisors of employees who work with reproductive hazards.

3. Reproductive hazard assessments, including negative exposure assessments, are required of all reproductive hazards and compared to existing exposure standards.

4. To keep exposures as low as reasonably achievable, the following hazard abatement methods shall be employed whenever possible.
    - Elimination or substitution with less hazardous materials
    - Engineering controls (ventilation)
    - Administrative controls (job rotation, work time limits)
    - Personal protective equipment

Chemical safety can mean healthy babies

What can research tell us about the effects of workplace hazards on unborn children? Unfortunately, not much. Scientists can guess about the dangers of chemical and other hazards by testing them with laboratory animals, but they can never be certain of the effects on human beings.

The Problem

Chemicals that cause damage to eggs and sperm, resulting in sterility or birth defects, are called mutagens. Chemicals that damage the fetus in the womb, causing miscarriage, stillbirth, or birth defects are called teratogens. Men who are exposed to mutagens on the job can become sterile, and defective sperm can cause them to father children with birth defects.

Women are especially at risk for reproductive disorders because they are born with all the eggs they will ever have, while men continually produce new sperm. Pregnant workers can expose their unborn children to hazardous contaminates because they absorb contaminates more easily than men and store larger amounts in their bodies for longer periods of time.

Navy Applicability

Navy policies and procedures for management of reproductive hazards are found in OPNAV Instruction 5100.23F, the Navy Occupational Safety and Health Program Manual. Personnel may be exposed to reproductive hazards by inhalation of harmful fumes, mists, dusts, or vapors, accidental swallowing of contaminants, or absorption of chemicals through the skin. You must experience unprotected exposure to a certain level, or dose, of a reproductive hazard for it to present a potential health risk. Examples of tasks that could involve exposure to reproductive hazards in Navy shore workplaces include painting and paint removal, application of pesticides, and lead-acid battery maintenance.

Here at the Recruit Training Command, Great Lakes, the most abundant sources of reproductive hazards include benzene, cadmium, carbon monoxide from gasoline engine exhaust, lead, mercury, toluene found in paints, lacquers, thinners, and lead-based paint. Fortunately exposure to the reproductive hazards are short-term, isolated events, resulting in very low exposures. A useful table is included at the conclusion of this safety bulletin.

Navy civilian personnel who become pregnant, or are trying to become pregnant, are strongly encouraged to report this promptly to their supervisor. Enlisted personnel are required to do so to receive necessary counseling, monitoring, and possible job modifications. Keep in mind that during the first weeks of pregnancy, major organs are forming in the fetus. So, even though you may not know you are pregnant during the early stages, it is always important to consider reproductive hazards.

Protect Tomorrow's Children

Whether a man or a woman and if you're planning to have children, you have the responsibility to protect yourself from chemical exposure. The primary objective of the Navy's control program is to keep exposure to reproductive hazards as low as possible. This is achieved through identification of reproductive hazards in the workplace; workplace monitoring; substitution with less hazardous or non-hazardous materials; engineering controls such as local exhaust ventilation systems; administrative controls such as job rotation; use of personal protective equipment; and counseling.

For further information regarding hazards, control measures, and personal protective equipment, you should consult the Material Safety Data Sheet for the hazardous substance you are using.